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To cite this article: Yu Yan, Yating Zheng & Tianguang Meng (22 Dec 2025): Vertical and Horizontal Modes of Collaboration in Urban Governance: A Comparative Analysis of Citizen Service Hotline in Beijing and New York City, Journal of Comparative Policy Analysis: Research and Practice, DOI: [10.1080/13876988.2025.2596830](https://doi.org/10.1080/13876988.2025.2596830)

To link to this article: <https://doi.org/10.1080/13876988.2025.2596830>



Published online: 22 Dec 2025.



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Vertical and Horizontal Modes of Collaboration in Urban Governance: A Comparative Analysis of Citizen Service Hotline in Beijing and New York City

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(Received 7 May 2025; accepted 24 November 2025)

ABSTRACT *How inter-departmental collaboration shapes urban governance remains insufficiently explored. This article contributes to the scholarship by proposing a three-dimensional analytic framework: leadership, institution, and mechanism. Using this, the article conducts a comparative analysis of citizen service hotlines, one of the most vital projects, in Beijing and New York City (NYC). Beijing adopts a vertical mode characterized by a centralized and administrative-oriented leadership, comprehensive institutions, and cross-level cooperation. In contrast, NYC follows a horizontal mode marked by a technology-oriented leadership, fragmented institutions, and contractual cooperation. These modes of collaboration help explain variations in the performance of urban governance across the two cities.*

Keywords: urban governance; modes of collaboration; government responsiveness; comparative analysis; citizen service hotline

1. Introduction: Making Urban Governance More Responsive

As urbanization accelerates globally, cities are facing unprecedented governance challenges. In this context, urban governance is no longer solely about planning urban space or managing infrastructure. Instead, it increasingly hinges on the ability of city

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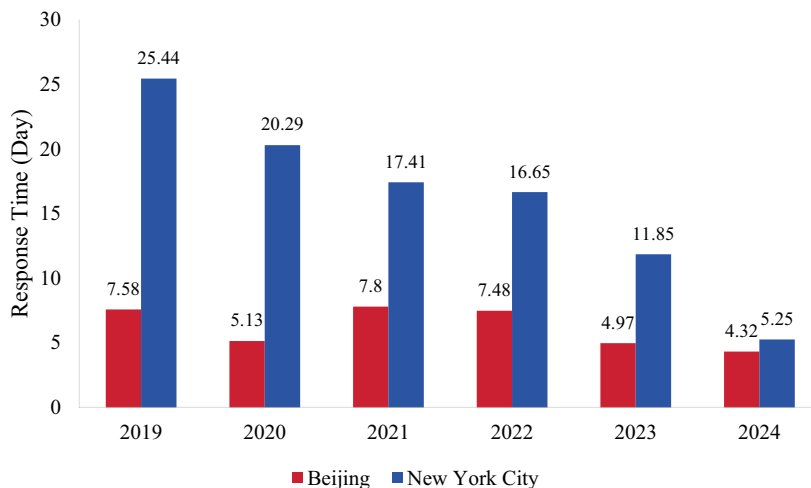
governments to interact effectively with citizens and respond to their evolving needs. Responsiveness is now widely recognized as a core value of good urban governance (Hendriks 2014), especially as public expectations rise and urban problems become more interdependent and multifaceted. Among the various elements that shape urban governments' responsiveness, internal collaboration across departments and agencies plays a critical role. Effective interdepartmental collaboration ensures that governments can deliver coherent, timely, and citizen-centered responses, thereby enhancing the overall quality and legitimacy of urban governance.

While a growing body of research on urban governance emphasizes the importance of government responsiveness to citizen demands, relatively less attention has been paid to the internal organizational mechanisms that shape such responsiveness. This study contributes to the scholarship by focusing on inter-departmental collaboration within government, particularly in the context of citizen service hotlines. To this end, the article conducts a comparative case analysis of Beijing and New York City (NYC), examining how differences in internal collaborative practices help explain variation in responsiveness outcomes.

These two cities have both placed significant emphasis on their performance of urban governance and later implemented multiple projects, among which the citizen service hotline has become one of the most common and important channels for citizens to issue their requests and concerns to their city government. Although both cities have established digital platforms to enhance their responsiveness, a notable divergence exists in how promptly they respond to citizen requests. Figure 1 illustrates the differences in average resolution times over the past five years.¹ In Beijing, the average resolution time has been reduced to fewer than five days, whereas in NYC, the resolution time has typically remained above ten days until the year 2024.²

What factors might account for this difference in their responsiveness? Based on a comparative analysis of these two cities, this article argues that the key lies in the distinct

Figure 1. Resolution times for citizen request in Beijing and NYC



modes of internal collaboration within the government that each city has adopted to support the operation of their citizen service hotlines. Specifically, this article compares and contrasts the functioning of their citizen service hotlines – Beijing’s 12345 (Beijing12345) and New York’s 311 (NYC311). This article examines how their respective collaborative arrangements, characterized by differing leadership structures, institutional frameworks, and coordination mechanisms, shape the effectiveness of their responses to citizens’ requests.

Our analysis reveals that while both cities leverage advanced digital technologies to enhance citizen accessibility and responsiveness, they adopt notably different collaborative approaches. Beijing employs a vertical mode characterized by centralized leadership and administrative reforms that prioritize swift responses to citizen requests. In contrast, NYC embraces a horizontal mode that fosters inter-departmental collaboration through agreements. These distinct approaches reflect different collaboration modes adopted by each city, highlighting how structural differences in leadership, institution, and mechanism influence the collaboration and thus the performance of urban governance.

The remainder of this article is organized as follows. The second section reviews existing studies on urban governance, with particular attention to the role of inter-departmental collaboration within government. To contribute to this scholarship, this article proposes a theoretical framework that explains how collaboration within the government enhances responsiveness. The third section explains why Beijing and NYC are chosen for comparison, introduces these two cases, and presents the methods used to collect and analyze materials. Both Beijing and NYC have not only applied digital technologies to improve the accessibility and efficiency of their citizen service hotlines, but also established laws and rules to enhance the functioning of request handling. While both cities adopt digital technologies to answer citizens’ needs, they differ in the mode of collaboration through which the municipal governments respond to citizen requests. The fourth section compares these two cases across three dimensions: leadership, institution, and mechanism. Section five concludes this article with a discussion of the limitations of this study and the potential directions of future research.

2. Bring Collaboration to Urban Governance

Urban governance is usually studied as a process of interaction among governmental and societal actors, as well as between public and private institutions (e.g., Hunter 1953; Dahl 1961). Through the coordination of multiple actors, such as government agencies and non-governmental organizations, urban governance aims to promote socioeconomic development and enhance urban competitiveness (Pierre 1999). Amid accelerating global urbanization, urban governance faces unprecedented challenges such as resource scarcity, institutional fragmentation, and the contestation among multiple actors (Da Cruz et al. 2019). These challenges require cities to improve their capacity for effective and responsive governance. In this context, government responsiveness, defined as the ability and willingness of governments to absorb public demands and take timely action (Soroka and Wlezien 2009), has emerged as a central focus of urban governance studies (Hendriks 2014). Among the many actors involved, government institutions remain the most critical in driving improvements in responsiveness.

Existing literature on responsiveness in the context of urban governance has primarily focused on external institutional and contextual factors that influence how well governments meet citizen preferences, such as participatory governance (Speer 2012; Wang et al. 2022), citizen information frameworks (Yuan and Shen 2024), and jurisdictional or metropolitan configurations (Kelleher 2006). However, relatively little research has explored government responsiveness from an internal perspective. Importantly, responsiveness in urban governance depends not only on whether governments are willing to respond, but also on whether they are capable of doing so. This capacity is profoundly shaped by institutional design, policy integration ability, and political power structures (Da Cruz et al. 2019; Rimkutė and Van der Voet 2024). Therefore, improving the responsiveness of urban governance requires a fundamental transformation in its internal coordination structures – specifically, enhanced collaboration across departments and agencies, which is the focus of this article.

2.1 Collaboration and Its Types

A smaller but increasingly prominent body of research has shifted its focus to the interaction between multiple actors within the government, emphasizing the importance of “collaboration” in public service (Wouters et al. 2023; Schiff 2025). As urban challenges become increasingly complex and cross-sectoral, no single department or agency can independently address issues such as climate change and public health; inter-organizational collaboration has thus emerged as a critical approach in urban governance for advancing digital public services and enhancing government responsiveness. (Chen et al. 2019; Fan et al. 2019). These studies no longer explore government responsiveness solely from a technological or institutional perspective but instead shift to the concept of “collaborative governance” based on the interactions among multiple stakeholders. By connecting them, collaboration not only helps integrate diverse resources and expertise but also significantly improves the implementation outcomes of various government reform projects (Gil-Garcia et al. 2015). Furthermore, because it transcends the traditional hierarchical structures and closed top-down processes unique to public organizations, collaboration brings about more innovation (Bommert 2010).

Broadly speaking, collaboration is defined as “a process through which parties with different perspectives on a problem can constructively explore their differences and find solutions that go beyond their limited individual visions of possibilities” (Gray 1999). Therefore, the term “collaboration” can also refer to a wider range of phenomena, including collaborative governance (Ansell and Gash 2008; Emerson et al. 2012), collaborative public management (Agranoff and McGuire 2003), network governance (Provan and Kenis 2008), governance networks (Klijn and Koppenjan 2015), collaborative platforms (Ansell and Gash 2018), and collaborative governance regimes (Emerson and Nabatchi 2015). Despite conceptual differences, these phenomena all aim to address complex collective action problems and involve cross-boundary, consensus-driven efforts among multiple stakeholders (Dill 2025).

When applying collaboration to studying government actions, it can be examined externally and internally. External collaboration involves the participation of government and non-governmental entities (Nam and Pardo 2014b). This form of collaboration arises

when stakeholders work with the government to formulate new policies or solve public problems (Bryson et al. 2006). Moreover, collaboration can also be defined within the government, or “internal collaboration”. Holding this internal perspective, Harrison et al. (2012) also define collaboration as the sharing of responsibility and power in government operations, policies, or decision-making across multiple stakeholder groups. Internal collaboration can be described as inter-departmental or inter-agency collaboration (between public organizations), also known as “collaborative governance” (Viale Pereira et al. 2017).

The academic community has highlighted the importance of government in collaborative governance, considering the roles that governments play within collaborative governance (Howlett 2014; Sullivan et al. 2025). However, the focus remains on the functions and roles of the government in relation to other actors within collaborative networks, with a lack of exploration into the internal cross-departmental collaboration models within the government. In fact, government needs to strike a balance between its capacity and responsiveness to external demands (Rimkutė and Van der Voet 2024) in order to promptly address the diverse demands of external stakeholders, thereby improving the overall effectiveness of governance. The way in which different collaboration arrangements within government influence its responsiveness in the citizen hotline service is precisely the focus of this study.

2.2 Inter-departmental Collaboration: Debates and Directions

Existing scholarship acknowledges that inter-departmental collaboration constitutes a critical mechanism in urban governance for addressing complex public problems. Institutionalized incentives and management mechanisms are argued to help overcome administrative boundaries, thereby enhancing policy integration and implementation (Daley 2009; Sharp et al. 2011; Mullin and Daley 2009, 2018). Within multi-level governance structures, inter-departmental collaboration has been identified as a key approach to integrating policies on the environment, transportation, and land use (Homsy and Warner 2014; Homsy 2018). More recent studies further demonstrate that institutional arrangements, by shaping inter-departmental feedback mechanisms, can directly influence the design of climate-adaptive policies (Deslatte et al. 2025). Overall, these studies consistently emphasize the central role of collaboration in resource integration, policy implementation, and adaptive capacity. However, collaboration does not always produce the intended outcomes. Empirical research shows that governance fragmentation, fiscal pressures, and divergent preferences may increase the costs of collaboration and even entrench departmental boundaries (Deslatte and Feiock 2019; Deslatte and Stokan 2020; Stokan and Deslatte 2020). Institutional variation also shapes the depth and adaptability of collaboration (Deslatte et al. 2024, 2025). Moreover, while inter-departmental collaboration may facilitate greater policy integration, it does not automatically translate into more effective implementation (Feiock et al. 2017; Homsy et al. 2018). Thus, inter-departmental collaboration in urban governance is simultaneously regarded as both a critical tool for addressing collective action dilemmas and a practice vulnerable to inefficiency or failure under institutional and resource constraints.

In addressing the question of how to overcome administrative silos and enable collaboration, the literature has identified two primary directions. The first emphasizes

institutional and organizational arrangements. Institutionalized coordination mechanisms, such as inter-departmental committees, liaison officers, and lead agencies, can foster horizontal coupling within bureaucratic systems (Wilkins et al. 2016; Scott and Gong 2021). Joint rule-making, cross-agency performance evaluations, and budget linkages have been identified as effective strategies to reduce transaction costs and institutionalize collaboration (Sharp et al. 2011; Duffy and Cook 2018). Task characteristics also significantly shape inter-departmental interaction: goal-oriented tasks are more conducive to communication, whereas process-oriented tasks tend to reinforce internal closure (Vantaggiato et al. 2020). In emergency management and public health contexts, institutionalized linkages, political commitment, and leadership support have been shown to help overcome information and resource barriers (Wolf-Fordham 2020). In addition, diverse organizational models provide multiple pathways for fostering collaboration (Krause and Hawkins 2021).

The second stream highlights the role of technological instruments. Digital platforms and shared workflows can transform inter-departmental tasks into traceable work orders, thereby mitigating frictions caused by information asymmetries (Duffy and Cook 2018). Open collaboration and crowdsourcing mechanisms expand channels for information acquisition and sharing, particularly useful in crisis contexts for enabling rapid responses (Roberts 2011). Cross-agency data standards, interfaces, and visualization dashboards contribute to building “shared situational awareness” that supports coordinated decision-making across departments (Rouzbehani 2020). Collectively, these studies suggest that technology functions not as a substitute for institutional reforms but as an embedded tool that enhances communication and transparency, thereby layering collaborative capacity onto existing governance structures and mitigating the “silo effect”.

While this body of literature provides a solid foundation for understanding both the value and limitations of inter-departmental collaboration, several gaps remain. First, existing studies tend to focus on specific policy domains, such as climate governance, emergency management, or public health, while giving less attention to inter-departmental collaboration in the delivery of routine public services. Second, although some research examines organizational models and functional differences, much of this work remains descriptive of structural conditions and lacks comparative, cross-contextual analyses or deeper investigation into internal governance mechanisms and administrative behavioral logics. Finally, although digital tools are widely framed as a potential solution to silos, their effectiveness is often constrained by organizational culture and administrative routines, and the embedded processes through which technology translates into collaborative outcomes remain insufficiently theorized and empirically tested.

2.3 Building a Theoretical Framework to Explain Collaboration

The factors influencing collaboration are one of the key issues in this field of research. The effectiveness of collaboration is the result of the interaction between factors such as structure, processes, resources, environment, and management (Bryson et al. 2015; Ansell and Gash 2008; Smith 2009; Emerson and Nabatchi 2015). The collaborative governance model developed by Ansell and Gash (2008) identifies four broad variables that contribute to collaboration: starting conditions, institutional design, leadership, and the collaborative process. This model has been widely adopted and has undergone

extensive validation, refinement, and expansion in subsequent studies. Following this review of the collaboration literature, and given the significance and widespread use of the Ansell and Gash model (2008), this article focuses on revisiting the core elements of their framework and proposes a new analytical framework based on their model, along with insights from related studies.

First, starting conditions set the initial levels of trust, conflict, and social capital, which can become either resources or liabilities during the collaborative process. Since participation in collaboration is voluntary, trust is a widely discussed factor in the collaboration literature. It is often described as the “lubricant” that makes the collaborative gears turn (Thomson and Perry 2006; Ansell and Gash 2008; Emerson and Nabatchi 2015). Stakeholders are more likely to participate only when they believe that the collaborative process will be managed in good faith and that other stakeholders will not engage in opportunistic behavior (Edelenbos and Klijn 2007). Trust directly impacts decision-making participation by influencing stakeholders’ understanding of the risks and vulnerabilities associated with participation (Ansell et al. 2020).

Second, institutional design sets the fundamental rules for collaboration. It refers to the formulation of formal and/or informal rules to structure interactions and collective decision-making within policy networks (Klijn and Koppenjan 2015). The collective action dilemma inherent in institutional design drives the emergence of collaborative governance, and the institutional rational choice perspective suggests that institutional characteristics are factors in the formation of collaborative groups (Feiock 2013). Common forms of institutional design include policy and legal frameworks, which provide goals, principles, regulations, measures, budgets, and tools that guide public institutions in making decisions and taking actions to achieve certain outcomes (Ostrom 1975). These institutional designs can either promote or hinder the emergence of collaboration. When the institutional designs of different agencies are compatible in terms of organizational goals, the agencies are more likely to collaborate and produce meaningful outcomes (Kwon and Feiock 2010). Conversely, incompatible designs may create silos and lead to high transaction costs for inter-agency collaboration (Mu et al. 2019).

Third, leadership provides the necessary mediation and facilitation for the collaborative process. Participants in collaboration are autonomous or semi-autonomous actors, so an authoritative management structure is crucial for achieving collaborative goals (Scott and Thomas 2017). Many studies have pointed out that collaboration performance can be enhanced through facilitative leadership or meta-governance (Crosby and Bryson 2005). Some scholars distinguish between two forms of meta-governance: horizontal meta-governance and vertical meta-governance (Mu et al. 2019). Horizontal meta-governance refers to self-organizing mediation and facilitation at the institutional level, arranged by the leaders within the collaboration (Provan and Kenis 2008). In contrast, vertical meta-governance stems from a higher authority and typically utilizes delegation and regulatory tools to resolve conflicts between institutions and mediate actions (Zhu 2014). Whether horizontal or vertical, both forms of meta-governance highlight the critical role of leadership in collaborative networks.

Lastly, the collaborative process itself is highly iterative and non-linear, which Ansell simplifies into a cycle, with communication mechanisms at its core for achieving collaboration (Ansell and Gash 2008). Since issues related to cross-organizational

processes can lead to collaboration failure (McNamara et al. 2020), collaboration theory places significant emphasis on communication channels and resource sharing. Scholars have explored various factors that facilitate smooth communication during the collaborative process, including standard procedures (Mu et al. 2019; McNamara et al. 2020), inter-departmental coordination mechanisms (Molenveld et al. 2020), and the richness and sharing mechanisms of resources (Mayer and Kenter 2015). These elements together represent the organizational mechanisms that enable collaboration, serving as structural arrangements.

Built upon the large body of literature on collaboration with varying terminology used, this article develops a conceptual framework to analyze collaboration models in citizen hotline services. Based on the classic model proposed by Ansell and Gash (2008), we integrate insights from several other papers that outline comprehensive collaborative models (Bryson et al. 2006; Daley 2009; Emerson and Nabatchi 2015). This approach strives to encompass the entire process of collaboration, extracting the elements most relevant to this study – namely, leadership, institution, and mechanism – as the analytical framework. The collaborative governance model proposed by Ansell and Gash (2008), which includes four broad variables (starting conditions, institutional design, leadership, and the collaborative process), provides clues for the development of the three-dimensional framework in this study. Based on a comparison of these comprehensive models and the practical situations of the two cities in this research, and considering the similarity in starting conditions between the two cities, this article simplifies the original model into three dimensions: leadership, institution, and mechanism.

The leadership dimension acts as the convener of collaboration and plays a key role in initiating collaborative governance, promoting shifts in stakeholders' beliefs, encouraging the collaborative process, and improving decision-making consistency (Scott and Thomas 2017). The institutional dimension represents the institutional characteristics of the collaborative governance environment and determines the capacity, limitations, and achievements of the collaborative arrangements (Dill 2025). The mechanism dimension involves the combination, use, and sharing of existing resources in the collaborative process, cross-departmental coordination, and the establishment of standard procedures between organizations (Mu et al. 2019; Molenveld et al. 2020). It is a structural arrangement that fosters the emergence of different collaborative models.

Therefore, based on the constructed “Leadership–Institution–Mechanism” three-dimensional analytical framework, this study empirically examines how different collaboration modes within government influence varying levels of government responsiveness through a comparative study of two major international cities – Beijing and New York City. In both cities, citizen hotlines have become a crucial part of government reforms in public service delivery in the digital age, and they serve as a key platform for residents to express concerns and provide feedback. However, there are significant differences in the collaboration models between the two cities, leading to variations in governance outcomes regarding the efficiency and quality of responses to citizen requests. By comparing Beijing's 12345 and New York City's 311 hotlines, this study reveals the divergences in collaboration paths between the two cities and their profound impact on responsiveness and service

delivery outcomes. Beyond the cases themselves, this comparative study offers insights into the broader role of collaboration in promoting urban governance in the digital era.

3. Research Design: Case Selection and Methods

3.1 Case Selection

To explore the impact of collaboration on urban governance, this article conducts a comparative case study of Beijing and New York City. The selection of these two cities is based on several important considerations that make them ideal for comparative analysis.

First, although Beijing and NYC differ significantly in terms of their national political systems and institutional contexts, both cities share key characteristics as global megacities. Both cities are home to massive populations and serve as economic and cultural hubs, concentrating vast resources and industries within their urban landscapes. These common features mean that both cities face similar urban governance challenges, often referred to as “big city diseases”, such as traffic congestion, environmental pollution, and strains on public infrastructure.

Second, both Beijing and NYC have successfully implemented citizen service hotlines (12345 and 311, respectively) to engage with the public and enhance the provision of public services. The increasing awareness of individual rights and growing public demands for better public services are common issues in both cities. In both cities, these citizen service hotlines have become central tools for collecting and responding to citizen concerns. These systems provide valuable insights into how internal reforms can be leveraged to enhance government–citizen interaction, making them highly relevant for the study of government responsiveness.

Third, as elaborated in the following sections, while both cities aim to improve government responsiveness through collaboration, they differ significantly in the structure and operation of their collaborative mechanisms. Beijing adopts a vertical model characterized by centralized, administration-driven leadership, comprehensive legal frameworks, and cross-level cooperation involving both municipal and grassroots governments. In contrast, NYC employs a horizontal model marked by technology-oriented leadership, fragmented institutional arrangements, and contractual coordination among peer-level agencies. These divergent collaboration structures make the two cities theoretically comparable, offering a valuable opportunity to examine how different modes of internal collaboration shape government responsiveness across distinct contexts. A detailed comparative analysis of these mechanisms is presented in the empirical sections of the paper.

Fourth, the availability of comprehensive materials and data from both cities supports a robust comparative analysis. For both Beijing12345 and NYC311, there is ample documentation, including official reports, service records, and phone call data, that details the functioning, performance, and impact of these hotlines. Additionally, previous studies and fieldwork in both cities offer qualitative insights into how these hotlines are operated and managed. This availability of materials makes it feasible to conduct an in-depth comparative case study, allowing for a thorough exploration of both the similarities and differences between the two systems.

3.2 Case Introduction

3.2.1 Beijing 12345 Citizen Service Hotline. With a 38-year history, Beijing12345 has undergone several adjustments and upgrades. In January 2019, the Beijing Convenience Call Center was renamed the Beijing Citizen Service Hotline Center with its primary function of serving Beijing residents, and later it also became available to enterprises on October 12. The hotline has set up a 24/7 working system throughout the year to receive citizen requests, which unifies the working procedures and standards across governments and departments at all levels under the immediate response mechanism. Each request must be addressed to residents and enterprises in a point-to-point manner, so that every request receives a response. In 2019, the hotline received more than 6.96 million requests, a 27.5 per cent increase compared to 2018. During the COVID-19 pandemic, the hotline played an extremely important role in collecting a wide range of demands, from prevention and control policies to medical treatment. In 2023, the volume of citizen requests via the 12345 hotline reached 21.44 million.

Ever since 2019, multiple technical and administrative innovations have been implemented to handle a fast-growing volume of citizen requests. On the technological front, in addition to improving the standards of the existing hotline channel, Beijing12345 has actively expanded to other online platforms. These include adding a dedicated 12345 feature to the official website of the Beijing Municipal Government, integrating it into the government service mobile app, and launching official accounts on both WeChat and Weibo. As a result, there is now a total of 17 channels through which citizens can submit their concerns and demands. In this process, Beijing12345 has also incorporated advanced digital and AI technologies into its operations, including intelligent voice assistants and smart systems for recording and categorizing service requests. These cutting-edge tools not only enhance the system's ability to quickly interpret and respond to citizen needs, but also help hotline staff record requests more efficiently and accurately, while automatically identifying the responsible government departments for follow-up actions.

As for the administrative dimension, in early 2019 Beijing launched the “Swift Response to Public Complaints” reform (SRPC) with the 12345 hotline as the major channel to collect citizens' demands. After receiving phone calls gathered by the 12345 hotline, the municipal government sends the demands of the public directly to lower-level governments, including district and grassroots governments. According to the principle of “whoever first receives the call shall take responsibility for it” (*shoujie fuze*),³ any government department or agency needs to respond to citizens in a timely and effective way. For complex demands that need to be solved across agencies at the same level or even across different levels, district and grassroots governments issue a request to seek assistance from upper-level governments.⁴ The municipal government coordinates and mobilizes various agencies to respond to the requests and solve the problems within the shortest time possible. By doing so, the SRPC reform aims to improve the quality of urban governance by solving problems that surround the public, resulting in an efficient governance system.

3.2.2 New York City 311 Hotline. As a non-emergency hotline, 311 has been adopted by multiple cities across the United States (Agarwal, 2013; Schwester et al. 2009; Chatfield and Reddick 2018; Clark et al. 2020), with New York City's 311 hotline arguably being

the most well-known. With over 20 years of service, NYC311 has become a vital component of the city's non-emergency service. It was officially launched in 2003 under Mayor Michael Bloomberg's administration with the primary function of providing residents, businesses, and visitors with streamlined access to city services. The introduction of NYC311 aimed to centralize non-emergency requests that were previously managed through a fragmented system of over 40 different agency hotlines (Nam 2012). NYC311 covers a wide array of services, from noise complaints to housing issues, allowing individuals to interact with the municipal government through phones, mobile apps, and online platforms.

Since its inception, NYC311 has undergone several key upgrades to enhance its efficiency and responsiveness (Nam and Pardo 2014a, 2014b). Within its first year, the system was able to handle service requests in more than 180 languages, demonstrating its commitment to diversity and inclusiveness. Technological applications, such as the launch of the NYC311 mobile app in 2009 and its integration with social media platforms like Twitter and Facebook, have transformed NYC311 from a traditional call center into a versatile, multi-channel service delivery platform (Minkoff 2016). These innovations have not only improved user experience but also allowed the system to manage an ever-growing volume of citizen requests.

In recent years, NYC311 has experienced a significant increase in service demands. During the COVID-19 pandemic, NYC311 played a crucial role in disseminating essential health information and directing residents to services like food assistance and testing sites. Its role expanded to cover pandemic-related inquiries, demonstrating the system's flexibility in responding to emerging urban challenges. During the fiscal year 2024, NYC311 received 38.2 million contacts from New Yorkers across the phone system, website, and social media channels.⁵

NYC311 ensures that service requests are promptly routed to the relevant city departments. Several reforms have been implemented to encourage government agencies to closely coordinate with the NYC311 call center, ensuring that citizen requests are addressed promptly. This collaborative approach forms the foundation of NYC311's performance, ensuring that residents' needs are met efficiently, whether in times of routine operation or crisis management. Inspired by global best practices and technological advances, NYC311 continues to refine its processes. Recent efforts include enhancing data-sharing mechanisms between agencies to improve real-time monitoring and response efficiency.⁶

3.3 *Methods*

The research methods applied in this article are divided into two main steps: material collection and data analysis. The first step in this research involved gathering a variety of materials and data for both the Beijing12345 and NYC311 hotlines. These materials include official documents, reports, and data available on government websites, which provide foundational information on the structure and functioning of the two hotlines. The authors relied heavily on public resources such as city regulations, service reports, and technology implementation documents to obtain a comprehensive understanding of the hotline systems.

In addition to desk research, fieldwork was conducted to gather first-hand information about the real operation of both hotlines. For Beijing12345, the authors visited the 12345 hotline call center, conducted interviews with staff members, and observed how citizen requests are processed. Due to the logistical and financial challenges of international travel, the authors were unable to conduct field research in New York City as frequently as in the Beijing case. Nevertheless, the authors still actively sought opportunities to gain insights into the NYC311 system. This included participating in three visits to New York to engage with US-based scholars and practitioners who have direct experience with the NYC311 system. These engagements helped provide deeper insights into the everyday functioning of NYC311 and its cross-agency collaboration. A summary of these activities is provided in the [Appendix](#).

To analyze these materials, we employ a comparative case analysis. For each hotline, the leadership, institution, and mechanism related to collaboration are examined. This includes an in-depth analysis of how citizen requests are received, categorized, and routed to the appropriate government agencies. As shown in the following section, these two cities adopt two different modes of collaboration, leading to notable time differences in responding to citizen demands. This approach enables a nuanced understanding of how each hotline performs in addressing public needs and promoting urban governance.

4. Modes of Collaboration: A Comparative Analysis of Beijing12345 and NYC311

By incorporating digital technologies, such as websites and mobile apps, both Beijing and NYC have first enhanced the accessibility of their citizen service hotlines and then utilized them to make cities more responsive. These innovations offer residents a vital platform to report their needs, concerns, and complaints. As the volume of citizen requests increases, these two municipal governments gain deeper insights into the day-to-day functioning of urban life, enabling them to respond more effectively and make more informed decisions to address public issues and improve urban lives. This growing capacity to understand urban spaces better through citizen input forms a strong foundation for better urban governance.

However, simply introducing and continuously updating new technologies is not enough to make cities responsive. The more important and challenging task for both Beijing and NYC is to effectively respond to citizen requests in a more substantive way. Based on analyses of government documents, publicly available information, and interviews, this article identifies differences between the two cities in three critical dimensions: leadership, institution, and mechanism. These distinctions, as shown in [Table 1](#),

Table 1. A comparative analysis of Beijing12345 and NYC311

	Beijing 12345	New York City 311
Leadership	Administrative-oriented	Technology-oriented
Institution	Comprehensive framework	Fragmented framework
Mechanism	Cross-level cooperation	Contractual cooperation

shape divergent modes of collaboration, which, in turn, help explain the varying outcomes of service provision via citizen service hotlines in these two cities.

First, the leadership dimension examines the entire system through which the citizen service hotlines operate. While both Beijing12345 and NYC311 have garnered significant attention from municipal leaders, their leadership styles differ in a notable way. As the following analysis shows, Beijing12345 functions under a centralized and strong leadership, which is more administratively oriented. Thanks to this, Beijing has enacted multiple administrative reforms aimed at increasing efficiency and effectiveness in responding to citizen requests. In contrast, the leadership behind NYC311 is more technology-driven, with continual efforts to introduce advanced digital technologies to improve accessibility and coverage of the hotline.

It is important to note that this contrast doesn't imply that Beijing lacks technological advancement or that NYC is without administrative improvements. The success of both hotlines stems from a combination of administrative and technological reforms. The distinction lies in the primary focus of their development. This divergence in priorities, as shaped by the strategic choices of municipal leadership, has led each city down a different path. The comparison presented below reveals that Beijing's administrative-focused leadership has had a stronger impact on improving the operational performance of its hotline service. In contrast, NYC's technology-oriented approach has made its hotline more accessible for citizens to voice concerns and submit requests, although it does not necessarily result in faster or more effective responses.

The creation of the Beijing12345 hotline can be traced back to the late 1980s when it was originally known as the "Mayor's Hotline". However, it was only since 2019 that Beijing12345 has been recognized as one of the most significant municipal-level projects. This heightened importance is not solely a result of technological advancements; rather, it stems from its unique leadership structure.

In 2019, Beijing launched the "Swift Response to Public Complaints" (SRPC) reform. This reform underscores the leadership of the Communist Party of China (CPC), ensuring that the CPC's political and organizational authority permeates the entire governance system.⁷ This power arrangement integrates resources and strengths to make the city more efficient and effective in addressing citizens' needs. During the process, the CPC serves a central leadership role, coordinating efforts among various government departments and agencies, grassroots governments, and communities to effectively resolve public issues. In particular, the Secretary of the Beijing Municipal Committee of the CPC has played a pivotal role in advancing the reform and elevating the significance of Beijing12345 in enhancing urban governance. From the outset, the Secretary has been deeply involved in the SRPC reform, personally leading the rule-making process, including the formulation of regulations discussed in the institution dimension.⁸ The Secretary places a strong emphasis on the performance of Beijing12345, especially regarding whether and how citizen requests are addressed by the government. The Secretary even holds a monthly review meeting to evaluate the performance of government departments and subordinate units in responding to citizens' requests, where he praises those who perform well and urges underperforming agencies to improve.⁹ Under the Secretary's strong leadership, CPC members in various departments and lower-level governments have responded actively, investing considerable time and effort to provide better responses to citizen needs.¹⁰

Furthermore, to enhance the daily operations of Beijing12345, the Beijing Municipal Administration of Government Services and Data Management, which oversees the Beijing12345 call center, has implemented a series of administrative reforms aimed at establishing a strong institutional foundation for high responsiveness. These reforms not only clarify the responsibilities of various government agencies but also promote collaboration across departments, both within the same level and between different levels of government. Additionally, the agency continuously refines its performance evaluation methods¹¹ to generate motivation for improved responsiveness.

As for NYC311, the mayor and the Office of Technology and Innovation (OTI), previously known as the Department of Information Technology and Telecommunications (DoITT), currently play crucial roles in leadership and oversight. Their attention and input ensure that the hotline operates efficiently and effectively, enabling it to meet the rising needs of citizens. In the creation and initial development of NYC311, Mayor Michael Bloomberg played a particularly pivotal role. Drawing from customer service models in the private sector, Bloomberg envisioned 311 as a centralized, all-purpose hotline that would simplify public access to city services.¹² He advocated for consolidating existing hotlines and repositioning 311 as a citizen-facing service platform that takes in resident concerns and directs them to the appropriate agencies. To strengthen oversight, Bloomberg moved NYC311's oversight from DoITT to the Mayor's Office of Operations (MOO), thereby increasing his administration's direct influence over its operations. Moreover, to break down organizational turf and foster collaboration, Bloomberg initiated several institutional reforms, including the introduction of Service Level Agreements (SLAs) and the appointment of agency liaisons, to ensure timely and coordinated responses to citizen requests.¹³

OTI has historically been responsible for managing NYC311's technological infrastructure and ensuring its effective operation. OTI oversees the back-end systems, software, and telecommunications that allow NYC311 to handle millions of service requests efficiently. It also ensures that the system is continually upgraded to keep pace with advances in technology and changes in public needs. Under the oversight of the OTI, NYC311 has consistently prioritized upgrading its technological infrastructure over the past 20 years to keep pace with the rapidly growing volume of requests and the increasing expectations of the public regarding its operations. From its early days using the Customer Relationship Management (CRM) system to its later embrace of open Application Programming Interfaces (APIs) and mobile app solutions, NYC311 remains committed to being at the forefront of digital technology. One of the most important technological reforms in NYC311 is the implementation of CRM software (Nam 2012). The CRM system allows for real-time tracking of service requests and seamless coordination between different government agencies. This technology enables NYC311 to efficiently handle millions of service requests annually, and also improves transparency by allowing citizens to track the status of their complaints online. Furthermore, with new digital technologies, NYC311 has expanded beyond its initial phone-based service model. In 2009, NYC311 launched a mobile app, followed by integration with SMS, Twitter, and other digital platforms. This digital transformation allows citizens to access city services through multiple channels, thereby improving accessibility. Citizens can now submit service requests, track their progress, and receive updates through digital mediums. Such advancement significantly expands NYC311's

coverage and makes it more convenient for users to engage with the system. NYC311 has also embraced business intelligence (BI) tools to enhance performance management and reporting (Nam 2012). By implementing advanced analytics and reporting systems, NYC311 can now generate insights into service delivery trends, agency performance, and customer satisfaction.¹⁴ These data-driven insights have been instrumental in driving continuous improvement in how the municipal government manages non-emergency services.

Second, the institution dimension examines the institutional framework for the operational effectiveness of citizen service hotlines. Both Beijing12345 and NYC311 have developed and implemented various institutions to enhance the entire process of handling citizens' requests. However, a significant difference between these two hotlines lies in the comprehensiveness of their institutional structures. Specifically, Beijing enacted a major regulation in 2021, followed by a series of supplementary policies, to formalize the entire request-handling process. Together, these form a well-structured legal framework that ensures clarity and accountability in how citizen requests are processed and responded to by government agencies. In contrast, NYC311 primarily relies on existing laws and regulations to answer citizen inquiries. Although the 311 call center has made significant efforts to establish a service level agreement (SLA) between the 311 call center and each service-delivery agency to define service standards and response timeframes,¹⁵ its institutional framework remains less formalized than that of Beijing12345. This is because, although SLAs specify the expected response times for different types of service requests, they do not cover the entire process of request handling in the way that Beijing's institutional system does. This distinction helps explain, in part, the relatively longer response times observed in New York City, as illustrated in [Figure 1](#). This comparison highlights how differing approaches to institutionalization shape the outcomes of urban governance projects.

As for Beijing12345, the most prominent institution is the administrative rule published in 2021, titled "Beijing Municipal Regulations on Swift Response to Public Complaints". This regulation is structured around five key components: value, leadership, process, evaluation, and accountability. The value component underscores the functional status of Beijing12345 in serving the public, requiring timely and efficient responses to citizens' urgent needs and concerns. The organizational component highlights the leadership and responsibilities of the Chinese Communist Party and the government, while also encouraging the involvement and participation of the public. The process component details the steps involved in handling citizen requests, including reception, classification, assignment, processing, and feedback. This component also stipulates a seven-day deadline for government responses. The evaluation component establishes a comprehensive assessment system centered on core indicators such as response rate, resolution rate, and satisfaction rate, incorporating these metrics into the overall performance evaluation of the government. Lastly, the accountability component specifies the supervision and legal responsibilities during the operation of Beijing12345. This regulation ensures that the process of addressing citizen requests becomes efficient, transparent, and subject to public and media oversight.

Subsequently, building on this regulation, the Beijing Municipal Government has issued a series of supplementary policies that remain in effect today. These policies not only further clarify the procedures and time requirements for responding to citizen

requests – for example, most requests must be resolved within seven working days – but also strengthen government accountability by ensuring that even complex requests are directed to the appropriate agency.¹⁶ In terms of performance evaluation, Beijing12345 has revised its indicators and calculation methods multiple times.¹⁷ Through these efforts, it has institutionalized the entire hotline service process, enabling it to function effectively even amid changes in CPC leadership.

Although NYC311 is also supported by several institutions, its framework remains fragmented and it lacks the coherence of a comprehensive system. Currently, three main laws and rules underpin the operation of NYC311. Among them, only one, SLAs, is specific to NYC311, while the other two, including the City Administrative Procedure Act (CAPA) and the New York City Charter, are broader in scope and apply to city agencies more generally. While these three regulatory tools offer essential support to NYC311's daily operations, their interconnections are limited. Rather than forming an integrated framework, they function independently within their respective scopes. In contrast to the more unified and comprehensive institutional structure developed for Beijing12345, NYC311's system lacks coordination and completeness, resulting in a more segmented approach to service delivery and governance.

To enhance accountability and responsiveness, NYC311 has established SLAs with various agencies. These agreements set clear expectations for response times and service quality for different types of requests, enabling NYC311 to track performance metrics and ensure compliance. These agreements are crucial for maintaining high standards of service delivery, as they require agencies to prioritize requests received through NYC311 and provide timely updates to residents.¹⁸ Moreover, The City Administrative Procedure Act (CAPA) is a foundational legal framework that explains how city agencies, including those involved with NYC311, create and implement rules. CAPA not only mandates transparency in government rule-making, but also encourages citizen engagement in this process. This ensures that NYC311 operates under a clear set of guidelines, making it accountable to the public and enhancing trust in city government. In addition, NYC311 operates under specific local laws and provisions set forth in the New York City Charter. These laws outline the responsibilities of city agencies in responding to service requests and establish standards for timeliness and quality of service. The NYC Charter stipulates that all city agencies must cooperate with NYC311 to ensure that citizen inquiries are managed effectively and efficiently.

Lastly, the mechanism dimension examines the mechanisms that facilitate cooperation among government agencies. Citizen requests often involve complex issues that cannot be resolved by a single government department or agency; instead, they typically require collaboration across multiple actors. Both Beijing12345 and NYC311 have established rules and mechanisms to promote this inter-departmental cooperation, albeit through different approaches. Beijing12345 employs a cross-level approach, allowing lower-level governments (particularly grassroots governments) to seek support and guidance from upper-level authorities. This mechanism proves especially useful for addressing issues that exceed the authority or capacity of grassroots governments. In contrast, NYC chose a contractual approach by utilizing SLAs to build partnerships with various agencies, enabling them to collectively address the needs of citizens. While both cities aim to strengthen complex request handling, they differ in implementation. In practice, the cross-level mechanism used by Beijing12345 has proven more effective in accelerating

response times, as it empowers lower-level governments to seek support from higher authorities. In contrast, NYC311 continues to rely more heavily on relatively voluntary inter-agency negotiation, which may slow down the coordination process.

To enhance cooperation across different levels of government, Beijing introduced an administrative reform called “Quick Response to Community Calls” (*Chuishao Baodao*),¹⁹ which was piloted in 2018 and expanded citywide in 2019. This reform enables lower-level governments, primarily grassroots administrations, to request and receive assistance from higher-level authorities. When grassroots governments receive a citizen request from the 12345 call center, if they find out the handling of that request requires cross-level cooperation, they can send a request to government agencies at the upper level.²⁰ These agencies are then required to “report in”, meaning they must respond swiftly and arrive on-site to collaboratively address the issue with grassroots government. As the primary actors in this process, grassroots governments mobilize their own resources and coordinate with relevant upper-level departments to effectively investigate and resolve identified issues. Under the “Quick Response to Community Calls” reform, upper-level governments are obligated to respond and address issues within a specified deadline, ensuring that public demands are responded to promptly.²¹

Unlike Beijing, which adopts a cross-level cooperation model, NYC primarily strengthens responsiveness to citizen requests through horizontal inter-agency collaboration. Currently, NYC311 operates under a framework that mandates cooperation among city agencies. A key element of horizontal cross-agency collaboration within NYC311 is the implementation of SLAs with various city agencies. These agreements define the expected response times and quality standards for different types of service requests. According to the latest version of SLA, 21 New York City-level agencies²² have signed formal agreements with NYC311. Beyond these, no agencies from other levels of government have institutionalized partnerships with NYC311. By holding these city-level agencies accountable to these benchmarks, NYC311 ensures that requests are prioritized and addressed in a timely manner. This collaborative approach enhances operational efficiency and fosters a culture of accountability across departments. In addition, NYC311 promotes regular meetings between its leadership and representatives from various city agencies to discuss performance metrics, service delivery standards, and areas for improvement. These meetings serve as a platform for agencies to share insights, address challenges, and then enhance the overall user experience.²³ The collaborative dialogue helps identify recurring issues that may require inter-agency coordination, ensuring a comprehensive approach to problem-solving.

5. Conclusion and Discussion

Today, more than half of the global population lives in cities,²⁴ placing unprecedented demands on the capacity of urban governments. As citizens’ needs grow increasingly diverse and complex, how cities can respond to public demands in a timely and efficient manner has become a critical issue of urban governance. Addressing that challenge, this article focuses on the core actor of urban governance – the government, and investigates the internal factors that shape its performance. While existing research has primarily emphasized external drivers of government responsiveness, this study argues for a shift in focus toward internal factors, particularly inter-departmental

collaboration within government. To advance this argument, this article proposes that internal collaboration is a key factor shaping how governments deliver timely and effective responses. Building on this insight, the article develops a “leadership–institution–mechanism” analytical framework grounded in prior literature. Applying this framework, it conducts a comparative case analysis of one of the most important practices of urban governance in both Beijing and New York City – citizen service hotlines. The findings reveal that the distinct modes of internal collaboration adopted by each city are a key factor explaining the differences in their responsiveness outcomes.

The comparative analysis presented in this article concludes that Beijing employs a vertical mode of collaboration, while NYC adopts a horizontal one. These two modes differ across three key dimensions. The first dimension examines leadership. Bolstered by the “Swift Response to Public Complaints” reform, Beijing adopts a top-down structure with centralized leadership. In Beijing, the CPC plays a pivotal role in motivating various government agencies to collaborate and thus respond to citizens’ needs efficiently and effectively. This approach allows for a streamlined and integrated response mechanism that harnesses resources across various governmental layers. Conversely, NYC adopts a technology-oriented leadership style, which improves the coverage and users’ experience of the 311 hotline. Second, the institutional frameworks of both hotlines further reflect their differing operational philosophies. Beijing’s recent legal and administrative reforms have established a clear and comprehensive structure for managing citizen requests, emphasizing accountability and performance metrics. In contrast, while NYC311 utilizes existing regulations to guide its operations, the reliance on SLAs highlights a more informal yet effective approach to maintaining service standards. This difference points to the importance of robust legal frameworks in ensuring accountability and responsiveness in urban governance. Lastly, the mechanisms for inter-departmental coordination illustrate how both cities tackle complex citizen requests. Beijing’s “Quick Response to Community Calls” mechanism allows grassroots governments to engage higher-level authorities, fostering a coordinated response to citizen issues. In contrast, NYC311’s collaborative framework encourages regular communication and accountability among agencies, ensuring that citizen needs are met comprehensively and efficiently.

Thanks to the rapid advancement and widespread adoption of digital technologies, cities around the world are undergoing technological transformations and launching corresponding smart city initiatives. Beijing and NYC are no exception. Both have actively embraced digital tools to promote innovation in urban governance, including efforts to improve the quality of citizen service hotlines. Undoubtedly, digital technologies play a critical role in enhancing governments’ ability to collect, interpret, and respond to public demands. However, technology alone is not sufficient to guarantee meaningful outcomes. This article demonstrates that collaboration within government also significantly shapes government responsiveness. Both Beijing and New York City have placed a strong emphasis on sensing and responding to citizen needs as a central aspect of their smart city strategies. However, the effectiveness of these responses depends not only on technological capabilities but, more importantly, on governance and internal collaboration. The differences observed between the two cities suggest that the true realization of smart city initiatives is not merely a matter of digital tools, but also of how governments coordinate across departments, share responsibilities, and reform institutional arrangements. Inspired by these findings, this article

argues that building smarter cities requires a more human-centered approach, which requires us to rethink governance structures and prioritize collaboration to enhance responsiveness, inclusiveness, and ultimately citizen participation (Da Cruz et al. 2019; Song et al. 2023).

Notes

1. Figure 1 is produced by the authors. All data sources are official. The Beijing 12345 data were obtained from the hotline's official website, government reports, and interviews with officials from the Beijing Municipal Government; while the NYC 311 data were retrieved from the "NYC OpenData" platform. The NYC 311 data analyzed in this article are only up to September 2, 2024. Currently, the data released on the NYC Open Data website has been significantly reduced, making it impossible to extend the dataset through December 31, 2024.
2. To provide a more comprehensive assessment of hotline performance, the authors also attempted to identify and compare other relevant indicators by reviewing a variety of publicly available sources. Among the different indicators, only satisfaction rates were comparable across Beijing12345 and NYC311. According to the available data, Beijing's 12345 hotline reports satisfaction rates consistently above 90 per cent, whereas NYC311's reported figures typically range between 20 and 40 per cent (both on a 100 per cent scale). Although this suggests that Beijing's hotline may achieve higher user satisfaction, we believe that satisfaction rate alone does not provide a fully reliable indicator of performance for two main reasons. First, the satisfaction data for both cities is based on user surveys, which only reflect a subset of the overall user population and are not randomly sampled in a statistically rigorous manner. This limits their representativeness and comparability. Second, satisfaction ratings are inherently subjective and can be heavily influenced by individual expectations, emotional responses, and broader contextual or cultural factors. These elements are not necessarily indicative of the operational effectiveness of the hotline services themselves. For these reasons, we mention the satisfaction rate comparison here in a footnote rather than in the main text, and instead rely on resolution time as our primary, objective performance indicator.
3. This principle is written as 首接负责 in Chinese.
4. Based on transcripts from interview IDs BJ005 and BJ006.
5. Fiscal year in NYC begins on July 1 and ends on June 30 of the following year. Thus, fiscal year 2024 refers to the period from July 1, 2023 to June 30, 2024. Statistics comes from "Fiscal 2024 Mayor's Management Report", <https://www.nyc.gov/assets/operations/downloads/pdf/mmr2024/MMR-2024-Cover.pdf>.
6. Based on transcripts from interview IDs NY004 and NY005.
7. Based on transcripts from interview IDs BJ005 and BJ006.
8. Based on the transcript from interview ID BJ006.
9. Until now, there have been dozens of monthly review meetings. This article notes one such meeting that took place on July 31, 2020, to offer readers a basic understanding of what a typical review meeting entails. The details can be found at https://www.beijing.gov.cn/gongkai/ldhd/202007/t20200731_1966798.html.
10. Based on transcripts from interview IDs BJ001, BJ002, BJ007, BJ008, and BJ009.
11. Based on the transcript from interview ID BJ006.
12. Based on the transcript from interview ID NY006.
13. Based on the transcript from interview ID NY006.
14. Based on transcripts from interview IDs NY004 and NY005.
15. Based on transcripts from interview IDs NY004 and NY006.
16. Based on transcripts from interview IDs BJ003, BJ004, and BJ005.
17. Based on the transcript from interview ID BJ006.
18. Based on transcripts from interview IDs NY001 and NY003.
19. In Chinese, 吹哨报到.
20. Based on transcripts from interview IDs BJ001, BJ002, BJ007, BJ008, and BJ009.
21. Based on the transcript from interview ID NY006.
22. The latest SLA was published online on July 22, 2025. And the 21 agencies include Department of Consumer and Worker Protection, Department of Finance, Department of Health and Mental Hygiene, Department of Parks and Recreation, Department of Transportation, Taxi and Limousine Commission,

Department of Housing Preservation and Development, Department of Sanitation, Department of Buildings, Department of Environmental Protection, New York City Police Department, Office of Technology and Innovation, Department of Education, Human Resources Administration, NYC Emergency Management, Economic Development Corporation, Department for the Aging, Department of Homeless Services, Administration for Children's Services, Department of Records and Information Services, and Small Business Services.

23. Based on transcripts from interview IDs NY005 and NY006.
24. "68% of the world population projected to live in urban areas by 2050, says UN", <https://www.un.org/uk/desa/68-world-population-projected-live-urban-areas-2050-says-un>.

Disclosure Statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by the Tsinghua University Initiative Scientific Research Project [2022THZWC09]; The Youth Project of Beijing Social Science [24ZGC007]; The Youth Project of Humanities and Social Sciences from Ministry of Education of China [22YJC810011]; The Outstanding Young Scientist Project of Beijing [JWZQ20240202003].

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Appendix. Summary of Site Visits and Interviews

This table summarizes key site visits and interviews conducted for both the Beijing and New York City cases. It includes the date, location, format, and type of interviewees involved in our data collection process.

Given that the authors are based in Beijing, we had more frequent and direct access to officials from the Beijing 12345 call center and various levels of government. Since 2019, we have conducted over 100 interviews and field visits. Due to space limitations, only the most significant and representative cases are presented in the Appendix.

For the NYC311 case, international travel restrictions and logistical constraints made direct, repeated site visits less feasible. Nevertheless, we made every effort to collect relevant information. Over the past year, we conducted three visits to New York and engaged with US-based scholars and practitioners who have experience working with or studying the NYC311 system. Additionally, we conducted remote interviews, including survey-based interviews with 311 employees and discussions with scholars familiar with the NYC311 system.

By combining data gathered from these site visits and interviews with publicly available official reports and scholarly literature, we were able to construct a comparative analysis of the two hotline systems.

ID	City	Interviewee	Date	Format
BJ001	Beijing	Government employee at the subdistrict MLW	December 23, 2021	In-person
BJ002	Beijing	Government employee at the subdistrict TJY	January 13, 2022	In-person
BJ003	Beijing	12345 operator	July 18, 2022	In-person
BJ004	Beijing	12345 call center employee	July 19, 2022	In-person
BJ005	Beijing	12345 call center manager	July 29, 2022	In-person
BJ006	Beijing	12345 call center director	August 18, 2022	In-person
BJ007	Beijing	Government employee at the subdistrict CWM	June 3, 2023	In-person
BJ008	Beijing	Government employee at the subdistrict XG	May 17, 2025	In-person
BJ009	Beijing	Government employee at the subdistrict WSL	May 17, 2025	In-person
NY001	NYC	311 operator	August 30, 2024	Phone
NY002	NYC	City government employee	September 5, 2024	In-person
NY003	NYC	311 call center employee	September 26, 2024	Survey-based Interview
NY004	NYC	A professor at a US-based university who has collaborated with the NYC311 system and incorporated 311 data into his research	September 30, 2024	In-person
NY005	NYC	An assistant professor at a Chinese university who worked with the NYC311 when he was a graduate student and research assistant in NYC	January 3, 2025	In-person
NY006	NYC	A professor at a US-based university who has been deeply involved in reforms related to NYC311	February 20, 2025	In-person